

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An inverter control unit for motor driving, said inverter control unit comprising:

a rectifier circuit operable to convert ~~for converting~~ into a DC power a first AC power inputted from an AC power supply, said rectifier circuit including ~~which includes~~ a diode bridge and a reactor connected to an AC input side or a DC output side of said ~~the~~ diode bridge and having a small inductance, with said ~~the~~ diode bridge having a plurality of first driver elements;

an inverter operable to convert ~~for converting~~ the DC power from said ~~the~~ rectifier circuit into a second AC power so as to output the second AC power to a motor, said inverter including ~~which includes~~ a plurality of second driver elements;

a capacitor operable to absorb ~~for absorbing~~ regenerative energy of the motor, said capacitor being ~~which is~~ connected between DC buses of said ~~the~~ inverter and having ~~has~~ a small capacitance; and

an overvoltage protecting circuit ~~which is~~ connected between said ~~the~~ DC buses of said ~~the~~ inverter in parallel with said ~~the~~ capacitor so as to be actuated prior to a breakdown of said ~~the~~ first driver elements of said ~~the~~ diode bridge and said ~~the~~ second driver elements of said ~~the~~ inverter,

wherein a charging voltage of said capacitor, which is raised by the regenerative energy of the motor when the motor is being stopped, is set lower than a breakdown voltage of said capacitor and said inverter by said overvoltage protecting circuit.

2. (Currently Amended) The inverter control unit as claimed in Claim 1, wherein said ~~the~~ overvoltage protecting circuit is formed by a surge absorber.

3. (Currently Amended) The inverter control unit as claimed in Claim 1, wherein said the overvoltage protecting circuit is formed by a surge absorber and a gas arrester connected to said the surge absorber in series.

4. (Currently Amended) An ~~In an~~ air-conditioner including an inverter control unit for driving a motor, said the inverter control unit comprising:

a rectifier circuit operable to convert ~~for converting~~ into a DC power a first AC power inputted from an AC power supply, said rectifier circuit including ~~which includes~~ a diode bridge and a reactor connected to an AC input side or a DC output side of said the diode bridge and having a small inductance, with said the diode bridge having a plurality of first driver elements;

an inverter operable to convert ~~for converting~~ the DC power from said the rectifier circuit into a second AC power so as to output the second AC power to the motor, said inverter including ~~which includes~~ a plurality of second driver elements; ~~and~~

a capacitor operable to absorb ~~for absorbing~~ regenerative energy of the motor, said capacitor being ~~which is~~ connected between DC buses of said the inverter and having ~~has~~ a small capacitance; and

~~the improvement of the inverter control unit comprising:~~

an overvoltage protecting circuit ~~which is~~ connected between said the DC buses of said the inverter in parallel with said the capacitor so as to be actuated prior to a breakdown of said the first driver elements of said the diode bridge and said the second driver elements of said the inverter,

wherein a charging voltage of said capacitor, which is raised by the regenerative energy of the motor when the motor is being stopped, is set lower than a breakdown voltage of said capacitor and said inverter by said overvoltage protecting circuit.

5. (Currently Amended) The air-conditioner as claimed in Claim 4, wherein said the overvoltage protecting circuit is formed by a surge absorber.

6. (Currently Amended) The air-conditioner as claimed in Claim 4, wherein said the overvoltage protecting circuit is formed by a surge absorber and a gas arrester connected to said the surge absorber in series.